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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,343	02/22/2005	Gady Golan	29277	3635

7590 10/30/2007

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EXAMINER	
ABDULSELAM, ABBAS I	
ART UNIT	**PAPER NUMBER**
2629	
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10/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/525,343	GOLAN ET AL.	
	Examiner	Art Unit	
	Abbas I. Abdulselam	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/17/2007 has been entered.

Claim Objections

2. Claims 1, 14 and 28 are objected to because of the following informalities: Independent Claims 1, 14 and 18 recite a limitation "independently addressable pixel" while the corresponding support in the specification recite "separately addressable pixel". The two recitations are not necessarily the same and hence appropriate correction is required.

Response to Arguments

3. Applicant's arguments filed on 10/17/2007 with respect to claims 1-27 and 36-39 have been fully considered but they are not persuasive.

4. Applicant's arguments with respect to claims 28-35 and 40-41 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that the cited reference Youngquist et al. (USPN 6549179) does not teach an amended limitation, which states " independently addressable pixels such that the

independently addressable pixels respectively comprise a plurality of disassociated dots of LED material". However as shown in the art rejection below, Youngquist teaches that each LED/pixel is organized along rows and columns (col. 5, lines 11-15), and the two dimensional visual display also utilize adjacent light-emitting diodes which are connected for **selective activation** so as to provide different colors of light output for a given display element (e.g., a bargraph) (col. 3, lines 13-17). As shown in Fig. 3, Youngquist illustrates a rectangular-shaped diode with a length, D and discloses uniform pitch between the centers of the dots in the dot matrix visual display P, which can be less than D (col. 4, lines 65-67 and col. 5, lines 1-2). It is inherent that alternatively P can also be greater than D making the diodes further separated with each other and hence less associated. In addition diodes being disposed at a distance is known as Youngquist teaches improving the known by disposing the diodes in relatively densely packed two-dimensional row and column arrays (col. 1, lines 58-59).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-5, 13-14 and 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Youngquist et al. (USPN 6549179).

Regarding claim 1, Youngquist teaches a pixel-based electronic display comprising a plurality of independently addressable pixels, wherein said independently addressable pixels respectively comprise a plurality of disassociated dots of light emitting diode material ***(Fig. 3(20), dot matrix visual display, col. 5, lines 11-13 and the abstract, that each LED/pixel is organized along rows and columns (col. 5, lines 11-15), the two dimensional visual display also utilize adjacent light-emitting diodes which are connected for selective activation so as to provide different colors of light output for a given display element (e.g., a bargraph) (col. 3, lines 13-17). As shown in Fig. 3, Youngquist illustrates a rectangular-shaped diode with a length, D and discloses uniform pitch between the centers of the dots in the dot matrix visual display P, which can be less than D (col. 4, lines 65-67 and col. 5, lines 1-2). It is inherent that alternatively P can also be greater than D making the diodes more further separated with each other and hence less associated).***

Regarding claim 2, Youngquist teaches said pixels are arranged as segments of at least one seven-segment numeric display (col. 2, lines 61-65, col.8, lines 46-47 and Fig. 8(80)).

Regarding claim 3, Youngquist teaches said light-emitting diode dots are bonded to at least one underlying PCB (col. 4, lines 31-33 and Fig. 2 (20, 22)).

Regarding claim 4, Youngquist teaches said light emitting diode dots are wire-bonded to said at least one underlying PCB (col. 4, lines 31-33 and Fig. 2 (20, 22)).

Regarding claim 5, Youngquist teaches all of said pixels in any one of said segments are commonly wired (col. 1, lines 25-32 and col. 3, lines 40-44).

Regarding claim 13, Youngquist teaches associated with at least one pressure sensor based input device (Fig 1 (100, input sensors)

Regarding claim 14, Youngquist teaches a thin computing device comprising electronic processing functionality and a display screen, wherein said display screen is a pixel-based display screen comprising a plurality of independently addressable pixels, wherein said pixels respectively comprise dots of light emitting diode material ((Fig. 3(20), dot matrix visual display, col. 5, lines 11-13 and the abstract, each LED/pixel is organized along rows and columns (col. 5, lines 11-15), and the two dimensional visual display also utilize adjacent light-emitting diodes which are connected for selective activation so as to provide different colors of light output for a given display element (e.g., a bargraph) (col. 3, lines 13-17). As shown in Fig. 3, Youngquist illustrates a rectangular-shaped diode with a length, D and discloses uniform pitch between the centers of the dots in the dot matrix visual display P can be less than D (col. 4, lines 65-67 and col. 5, lines 1-2). It is inherent that alternatively P can also be greater than D making the diodes more further separated with each other and hence less associated).

Regarding claim 16,Youngquist teaches said display screen comprises a plurality of segments, each segment comprising a plurality of pixels wired together (col. 6, lines 36-58).

Regarding claim 17,Youngquist teaches said pixels are arranged as segments of at least one seven-segment numeric display (col. 2, lines 61-65, col.8, lines 46-47 and Fig. 8(80)).

Regarding claim 18,Youngquist teaches said light-emitting diode dots are bonded to at least one underlying PCB (col. 4, lines 31-33 and Fig. 2 (20, 22)).

Regarding claim 19,Youngquist teaches said light emitting diode dots are wire-bonded to said at least one underlying PCB (col. 4, lines 31-33 and Fig. 2 (20, 22)).

Regarding claim 20,Youngquist teaches said pixels in any one of said segments are commonly wired (col. 5, lines 4-17).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 6-12, 15, 21-27 and 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Youngquist et al. (USPN 6549179).

Regarding claims 6, 21 and 36-39, Youngquist does not specifically teach light emitting diode dots are of a thickness not exceeding 200 microns.

However, it would have been an obvious matter of design choice to make Youngquist's LED (20) as configured in Fig. 5 to have thickness of the desired size, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

Regarding claims 7 and 22, Youngquist teaches said underlying PCB is of a thickness not exceeding 200 microns (the PCB (22) comprises three layers of conductors interconnected, col. 5, lines 39-43. It would have obvious to alter the size of the layers constituting the PCB (22)).

Regarding claims 8 and 23, Youngquist teaches said underlying PCB is of a thickness not exceeding 150 microns (the PCB (22) comprises three layers of conductors interconnected, col. 5, lines 39-43. It would have obvious to alter the size of the layers constituting the PCB (22)).

Regarding claims 9 and 24, Youngquist teaches said pixels are configured to provide a brightness of substantially 4 Cd/cm at a power of substantially 1.5 mA (col. 6, lines 19-23 and col. 7, lines 25-30, brightness control ratio, it would have been obvious to alter an application of a pulse magnitude to set the desired brightness control ratio).

Regarding claims 10 and 25, Youngquist teaches said pixels are configured to provide a brightness of substantially 4 Cd/cm.sup.2 at a power of substantially 1.5 mA (col. 6, lines 19-23 and col. 7, lines 25-30, brightness control ratio, it would have been obvious to alter an application of a pulse magnitude to set the desired brightness control ratio).

Regarding claim 11, Youngquist does not specifically teach the electronic display being, incorporated into a smart card. However, as shown in col. 7, lines 25-30, Youngquist teaches display of any practical size. Hence it would have been obvious to make Youngquist's display small enough fro a desired purpose. In addition see In re Rose, 105 USPQ 237 (CCPA 1955).

Regarding claims 12 and 15, Youngquist teaches associated with a thin flexible battery within said smart card (col. 7, lines 25-30, display of any practical size, and battery for small electronic device is well known).

Regarding claim 26, Youngquist teaches at least one touch panel associated with said computing functionality for allowing a user to interact with said device (two-dimensional surface mounted LED array display 18 shown in FIG. 1, touch panel display is well known in the art).

Regarding claim 27, Youngquist teaches timing circuitry associated with said display screen, for energy management of said display screen (two-dimensional surface mounted LED array display 18 shown in FIG. 1, It would have been obvious to reconfigure the display (18) shown in a desired manner.).

9. Claims 28, 32, 34-35 and 40-41, are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (USPN 6482664) in view of Tsuji (USPN 7019723).

Regarding claim 28, Lee teaches a method of manufacturing a flexible low power display (col. 1, lines 66-67 and col. 2, lines 1-15) comprising: providing pixels, wherein said pixels respectively comprise a plurality of dots of LED material, (LED chip 3) bonding said dots to a PCB (PCB 6) having a backing material, and removing said backing (PCB 6 has a desired circuit pattern formed of diverse plated layers, col. 3, lines 7-20).

Lee does not teach : providing independently addressable pixels such that the independently addressable pixels respectively comprise a plurality of disassociated dots of LED material.

Tsuji on the other hand teaches as shown in Fig. 14 one common driver and four LED drivers (341) driving pixels constituted by a plurality of dots which are LEDs corresponding to RGB (col. 18, lines 43-47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lee's white LED used for display system (col. 4, lines 25-30) with Tsuji's plurality LED dots (driven by plurality of drivers), because both Lee and Tsuji teach using LEDs for electronic devices and one of ordinary skill in the art would have looked toward Tsuji for the type of LED and the manner of its use

Regarding claims 35 and 40-41, Lee teaches coating said display with a layer of epoxy resin (manufacturing white light-emitting diodes using epoxy resin powder mixed with a fluorescent material, col. 1, lines 6-10).

Regarding claim 32, Lee does not specifically teach a PCB is of a thickness not exceeding 200 microns.

However, it would have been an obvious matter of design choice to make Lee's PCB 6 as configured in Fig. 2 to have thickness of the desired size, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

Regarding claim 33, Lee does not specifically teach a PCB is of a thickness not exceeding 150 microns.

However, it would have been an obvious matter of design choice to make Lee's PCB 6 as configured in Fig. 2 to have thickness of the desired size, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

Regarding claim 34, Lee does not specifically teach a backing layer is of a thickness of substantially 300 microns.

However, it would have been an obvious matter of design choice to make Lee's PCB 6 as configured in Fig. 2 to have thickness of the desired size, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

10. Claim 29 –31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. in view Tsuji in view further in view of fan et al. (USPN 6403985).

Regarding claim 29, Lee does as modified by Tsuji not teach pixel dots comprising a masking procedure.

Fan on the other hand teaches an implant mask of photoresist 105 is formed which defines regions 41 between LEDs which will be ion bombarded to implant protons 111 (Step d) to laterally isolate individual dots or pixels 16', separated by highly (See Fig 10(c)).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Lee's (as modified by Tsuji) manufacturing process shown in Fig. 2 to adapt Fan's implant masking as illustrated in Fig. 10c because the use of implant masking helps fabricate an LED bar as taught by Fan.

Regarding claim 30, it would have been an obvious matter of design choice to make Lee's LED chip 3 as configured in Fig. 2 to have thickness of the desired size, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

Regarding claim 31, fan teaches said LED material is phosphide-doped gallium arsenide (col. 2, lines 13-15, gallium arsenide-phosphide on gallium arsenide substrates).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abbas I. Abdulselam whose telephone number is 571-272-7685. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abbas Abdulselam

Examiner

Art Unit 2629

October 25, 2007